

POTENTIAL PCB SOURCES TO PRSA

VOLUME IV OF IV

Prepared for:
CHEMICAL LAND HOLDINGS, INC.

Prepared By:
EI GROUP, INC.

December 18, 2001

Keegan Landfill

*Tom,
Your copy
marked up with
my comments*

FINAL DRAFT
SITE INSPECTION REPORT
KEEGAN LANDFILL
KEARNY, NEW JERSEY

PREPARED UNDER
TECHNICAL DIRECTIVE DOCUMENT NO. 02-8810-75
CONTRACT NO. 68-01-7346

FOR THE

ENVIRONMENTAL SERVICES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

SEPTEMBER 15, 1989
(REVISED SEPTEMBER 29, 1989)

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY:

Donald P. Hessemer

DONALD P. HESSEMER
PROJECT MANAGER

Tamara Marquart

TAMARA MARQUART
SITE MANAGER

REVIEWED/APPROVED BY:

Charles L. Boman for RN

RONALD M. NAMAN
FACILITY OFFICE MANAGER

SITE NAME: Keegan Landfill
ADDRESS: Bergen Avenue
Kearny, New Jersey 07032

EPA ID NO.: NJD981490428
LATITUDE: 40° 45' 27" N
LONGITUDE: 74° 08' 07" W

1.0 SITE SUMMARY

The Keegan Landfill Site is an approximately 230-acre tract of land in an industrial section of Kearny, Hudson County, New Jersey. The site is bordered on the south and northwest by Conrail railroad tracks, on the southwest by businesses along Bergen Avenue, and on the northeast by a large wetlands lake. There are residential neighborhoods nearby, as approximately 20,000 people live within 1 mile and 223,000 people live within 3 miles of the site.

The site is the property of the Town of Kearny, but the operator of the landfill was John P. Keegan/Municipal Sanitary Landfill Authority (MSLA). Keegan/MSLA leased the land from the Town of Kearny and operated it as a municipal landfill from the mid 1960s to 1974. Some construction debris, such as concrete and stone, as well as tree branches and limbs, are still being disposed of at the site. There is also unauthorized dumping occurring, as the site is littered with abandoned furniture, appliances, and automobiles. The site is not fenced except for a locked gate at the main Bergen Avenue entrance. Therefore, the potential for direct contact with exposed wastes exists. The Kearny Health Department reported that a member of the Kearny Police Department had worked as a truck driver for Dupont Chemical in Newark in the 1960s. He reported that every morning at least one truck with approximately forty 30-gallon drums went to the Keegan tract. These wastes included chromate and bichromate slurry, pigment wastes, and organic wastes. Disposal of these wastes took place in various areas of the landfill. Approximately 10 drums were observed on site during an off-site reconnaissance conducted by Malcom Pirnie, Inc., on April 28, 1986; however, during the NUS Corporation Region 2 FIT site inspection conducted on April 25, 1989, no evidence of the drums was present.

There is no information available on the quantity of wastes deposited on site or the location of the hazardous waste dumping areas. There have been several underground fires on site, most recently in June and July of 1987. The site is crossed by an unnamed creek and Frank Creek, which originates on site. These two creeks converge south of the site, and flow into the Passaic River.

In a letter dated July 2, 1987, the New Jersey Department of Environmental Protection (NJDEP) recommended that a closure plan be submitted. On July 28, 1987, the NJDEP met with Neglia Engineering Associates to discuss the closure of sections of Keegan Landfill. Neglia Engineering Associates recommended that the access road be improved to provide a turnaround area, that the area of the recently extinguished fires be covered with 2 feet of cover, and that the access road from Bergen Avenue be secured. The current status of the closure plan is unknown.

DEP
recommended
cover of
entire site

On April 25, 1989, NUS Corporation Region 2 FIT personnel collected seven surface water samples and six sediment samples at the Keegan Landfill Site. These samples were collected to determine the presence or absence of Target Compound List (TCL) substances, and the potential for these substances to migrate off site. Results of this sampling indicate the presence of mercury, lead, chromium, polychlorinated biphenyls (PCBs), and several semivolatile compounds in various sediment samples. Several inorganic compounds, including mercury, lead, and chromium, were detected in surface water samples collected in Frank Creek.

Ref. Nos. 1, 2, 3, 4, 14-22

2.0 SITE INSPECTION NARRATIVE

2.1 EXISTING ANALYTICAL DATA

It is unknown whether any sampling has been performed at the Keegan Landfill Site prior to the NUS Corporation Region 2 FIT site inspection on April 25, 1989.

Ref. Nos. 1, 2

2.2 WASTE SOURCE DESCRIPTION

The Keegan Landfill is approximately 230 acres in size. This site was used as a municipal landfill from the mid 1960s to 1974. Construction debris, such as concrete and stone, as well as tree branches and limbs are still being disposed of at the site. Also scattered throughout the site are abandoned automobiles, appliances, and furniture. The landfill is unlined and there have been reports of chromate and bichromate slurry, organic wastes, and pigment wastes being dumped on site. The quantities and location where these substances were disposed of are unknown. During a 1986 off-site reconnaissance by Malcolm Pirnie, Inc., approximately 10 drums were reported along the eastern access road. The contents and condition of these drums are unknown.

There have been a number of fires beneath the surface of the landfill which recurred periodically, venting smoke from the landfill surface. In July 1987, the NJDEP recommended that a closure plan be submitted for the Keegan Landfill Site. Neglia Engineering Associates met with the NJDEP and recommended that the areas of recently extinguished fires be covered with 2 feet of cover. At the time of the NUS Corporation Region 2 FIT site inspection, there was no evidence of any burning waste or drums on site.

Ref. Nos. 1, 2, 4, 21

2.3 GROUNDWATER ROUTE

The Keegan Landfill Site lies within the Hackensack Meadowlands, a large wetlands area formed by the action of glaciers and fluctuations in ocean water levels. The bedrock in the Hackensack River Basin is a part of the Newark Group of Late Triassic Age. Underlying the Keegan Landfill Site is the Brunswick Formation, which forms the bedrock throughout most of the Hackensack River Basin. The Brunswick Formation is composed of mudstone, siltstone, sandstone, and conglomerate. In the southern part of the basin, mudstone is the dominant lithology, and the deposits gradually become coarser grained northward. The Brunswick Formation is the most important bedrock aquifer in the

basin. The water table in this area is assumed to be at or near the ground surface. Groundwater in the Brunswick Formation occurs in a network of interconnected openings formed along joints and fractures. Groundwater flow in the area is likely to be southeast toward the Hackensack River. Unconsolidated deposits overlying the Brunswick Formation consist of till, varved silt and clay, alluvium, sand, and gravel. Small quantities of groundwater are stored in the till which overlies the bedrock.

Deposits of varved silt and clay, such as the lake beds that overlie bedrock and till in most of the meadows, have a poor permeability of approximately 10^{-5} to 10^{-7} cm/sec and impede the movement, discharge, and recharge of water. Stratified drift deposits of varved silt and clay, as much as 300 feet thick in the meadows, occur in two troughs which parallel the sides of the basin. The Keegan Landfill Site lies within the western trough.

Groundwater from the Brunswick Formation in the lower part of the basin is hard to very hard and highly mineralized. In this area the water quality in both the Brunswick and unconsolidated deposits is influenced by the water quality of the Hackensack River and Newark Bay. Both the surface water and groundwater quality in the lower area is influenced by the disposal of large quantities of sewage and industrial wastes in the Hackensack Meadows. High concentrations of chloride make the water in the lower Hackensack River unsuitable for municipal and industrial processes, although it is usable for cooling purposes.

There is no potable water collected from groundwater in the area. All municipalities within 3 miles of the site draw their drinking water from the Wanaque Reservoir, located in northern Passaic County. There are 10 industrial wells and one recreational well within 3 miles of the site, the nearest being approximately 0.7 mile southwest of the site. This well and nine others withdraw water from the Brunswick Formation. One well located 1.5 miles southeast of the site withdraws water from the stratified glacial drift. The recreational well is operated by the Essex County Parks Department, which is used to replenish water in a pond in Branch Brook Park located approximately 2.7 miles northwest of the site. This well information is summarized in Table 1. There is a potential for groundwater contamination since the landfill is unlined and reports have suggested that chromate and bichromate slurry have been deposited at the site. However, groundwater in the area is not used for potable water, but only for industrial and recreational purposes.

The net annual precipitation in the area is approximately 12 inches.

Ref. Nos. 2, 7, 8, 9, 10, 11, 12, 13, 24, 25

TABLE 1
GROUNDWATER USAGE
WITHIN 3 MILES OF KEEGAN LANDFILL
KEARNY, NEW JERSEY

<u>Name</u>	<u>Distance From Site (Miles)</u>	<u>Direction From Site</u>	<u>Well Depth (ft)</u>	<u>Aquifer</u>	<u>Use</u>
American Ref. Company	1.5	SE	35	Stratified drift	Industrial
V. H. Swenson Co., Inc.	0.75	N	400	Brunswick Formation	Industrial
Ronson Metals Corp.	1.75	S	300	Brunswick Formation	Industrial
Ronson Metals Corp.	2.0	S	165	Brunswick Formation	Industrial
Public Service Electric	2.0	SW	216	Brunswick Formation	Industrial
New Jersey Bell Telephone	2.25	SW	215	Brunswick Formation	Industrial
Grand Union Company	2.7	N	300	Brunswick Formation	Industrial
International Minerals and Chemicals	2.0	NNW	400	Brunswick Formation	Industrial
Honeycomb Plastics Corp.	0.7	SW	500	Brunswick Formation	Industrial
Honeycomb Plastics Corp.	0.7	SW	700	Brunswick Formation	Industrial
Essex County Parks	2.7	NW	450	Brunswick Formation	Recreation

2.4 SURFACE WATER ROUTE

The Keegan Landfill Site is located in the surface waters of the Hackensack Meadowlands. The site is relatively flat with a few small mounds of less than 10 feet in height which were probably caused by the deposition of wastes on site. It is bounded on the northeast by a wetlands lake approximately 15 acres in size. There is an unnamed creek crossing the site, and Frank Creek which originates on site. These two creeks converge south of the site, and flow into the Passaic River approximately 1 stream mile south of the site. The Passaic River drains into the Hackensack River which flows into Newark Bay, and eventually connects with the Atlantic Ocean. Both the Passaic River and Newark Bay are used for navigational purposes. The Hackensack River lies approximately 2.0 miles east of the site and is used for navigational purposes by commercial and recreational vessels. These two rivers are tidal in nature. The 1-year 24-hour rainfall in the area is approximately 2.75 inches. There are no surface water intakes on the Passaic River, the Hackensack River, or Newark Bay within 3 miles downstream of the site. There are no habitats of federally endangered species within 1 mile of the site.

There is a potential for surface water to be contaminated by any hazardous substances present on the site, since the site is located in a wetlands area. The site is also crossed by an unnamed creek and Frank Creek, which drain into the Passaic River and eventually into the Hackensack River and Newark Bay. Therefore, hazardous substances present on site could easily migrate from the site.

On April 25, 1989, NUS Corporation Region 2 FIT personnel collected seven surface water samples and six sediment samples to determine the presence or absence of TCL substances on site, and the possibility for migration of any present TCL substances. Sample locations are shown in Figure 3 of Section 3.0 and analytical data is discussed in Section 4.0 of this report. Results of this sampling indicate the presence of several semivolatile compounds, chromium, lead, mercury, and PCBs in on-site sediments. Several inorganic compounds including chromium, lead, and mercury were detected in on-site surface water samples. These inorganics were detected in higher concentrations in the downstream surface water sample NJG3-SW5 than in the upstream samples NJG3-SW6 and NJG3-SW7. Since chromate and bichromate slurry were reported to have been disposed of on site, chromium contamination of surface waters in Frank Creek may be attributed to the site. During the site inspection, a dead fish was observed in the unnamed creek. Also noted on site was an oily sheen in Frank Creek near sample locations NJG3-SW5 and NJG3-SED5.

Ref. Nos. 1, 2, 4, 5, 6, 7, 8, 9, 13, 22, 24, 27

2.5 AIR ROUTE

During the April 25, 1989 site inspection of the Keegan Landfill Site, no air readings above background conditions were detected on the Organic Vapor Analyzer or the HNu photoionization detector. There are no National Historic Sites within view of the Keegan Landfill Site. There have been several underground fires reported at the site; however, there is no indication of a potential for release of hazardous substances to the air.

Ref. Nos. 1, 2

2.6 ACTUAL HAZARDOUS CONDITIONS

A dead fish was observed in the unnamed creek during the NUS Region 2 FIT site inspection on April 25, 1989. Also noted on site was an oily sheen in Frank Creek near sample locations NJG3-SW5 and NJG3-SED5. Chromium contamination of surface water was found in Frank Creek. PCBs, lead, and mercury were also detected in sediments in Frank Creek, the unnamed creek, and the wetlands lake. There is a potential for direct contact with hazardous substances on site since the site is not fenced. No other actual hazardous conditions pertaining to environmental contamination have been documented. Specifically:

- Contamination has not been documented either in organisms in a food chain leading to humans or in organisms directly consumed by humans.
- There have been no documented observed incidents of direct physical contact with hazardous substances at the landfill involving a human being or a domestic animal.
- There have been no documented instances of damage to flora (e.g., stressed vegetation) that can be attributed to hazardous materials on site.
- There is no documented contamination of a sewer or storm drain.
- There is no direct evidence of a release of a substance of concern from the facility to groundwater.
- There is no threat of explosion on site, although there is a fire hazard. There have been numerous underground fires reported on site, most recently in June and July of 1987.

Ref. Nos. 1, 2



LEGEND

- SURFACE WATER SAMPLE
- SEDIMENT SAMPLE

ALL SAMPLE NUMBERS
PRECEDED BY NJG3

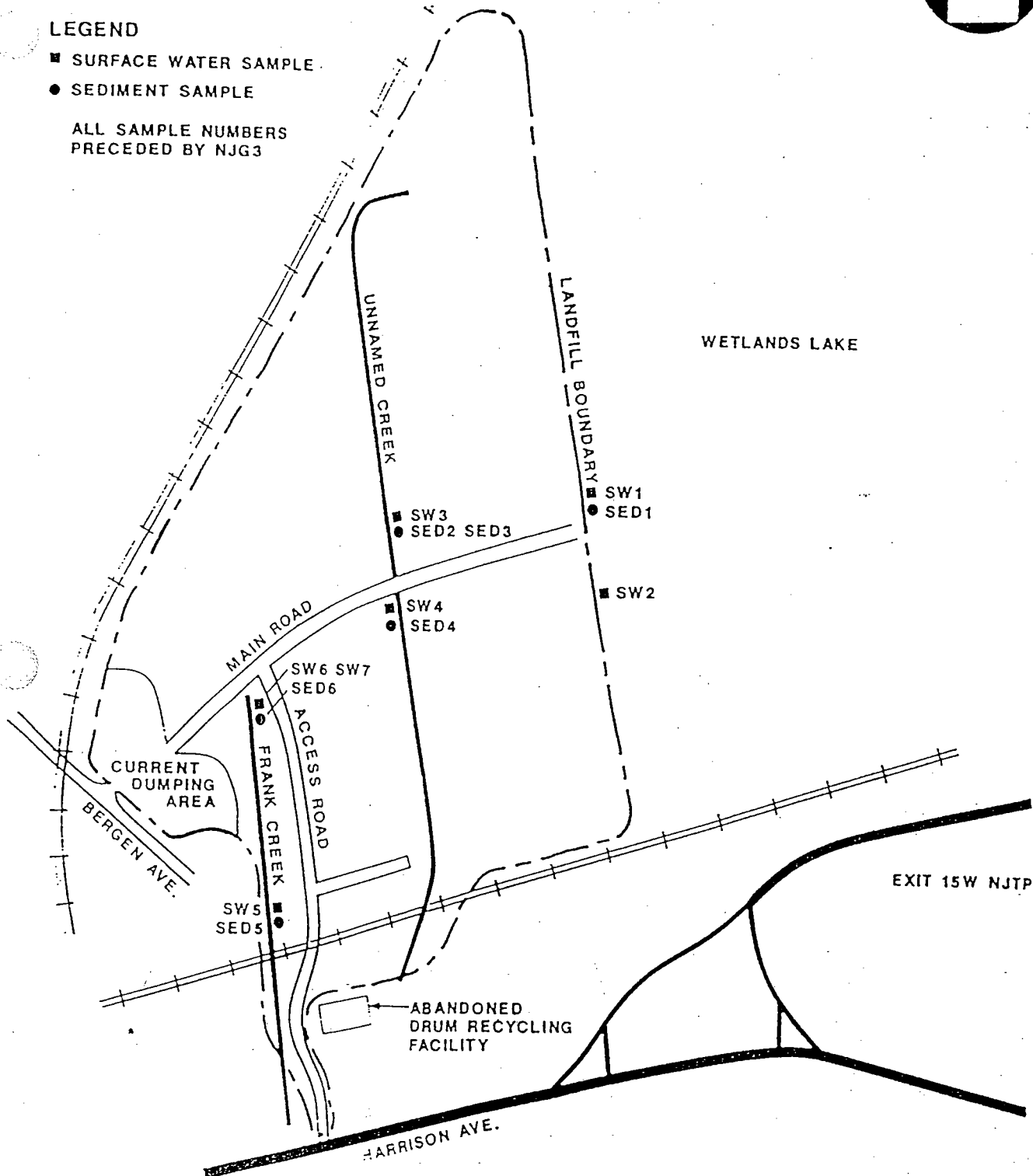


FIGURE 3

SAMPLE LOCATION MAP
KEEGAN LANDFILL, KEARNY, N.J.



4.0 SITE INSPECTION SAMPLING RESULTS

NUS Corporation conducted a site inspection of Keegan Landfill on April 25, 1989, at which time seven surface water samples and six sediment samples were collected. These samples were collected to determine the presence or absence of TCL substances on site. Sample locations are shown in Figure 3, Section 3.0. The results of the analyses for the sediment and surface water samples are summarized in Tables 2 and 3. A complete list of sample parameters and analytical results is presented in Reference No. 22.

Several additional semivolatile compounds were detected in sediment samples NJG3-SED1, NJG3-SED3, NJG3-SED5, and NJG3-SED6, but were below contract required Quantitation Limits (CRQL). The downstream sample NJG3-SED5 was found to contain greater concentrations of several semivolatile compounds, lead, and mercury than the upstream sample NJG3-SED6. Sediment samples NJG3-SED1, SED5, and SED6 also contained PCBs. Sediment samples NJG3-SED4 and NJG3-SED5 also contained estimated concentrations of tetrachloroethane of 68 ug/kg and 17 ug/kg, respectively. Sediment sample NJG3-SED4 contained an estimated concentration of 100 ug/kg of xylenes. These volatiles were not detected in any of the other sediment samples.

Surface water samples NJG3-SW5 and NJG3-SW6, 7, collected from Frank Creek, contained inorganic concentrations from 2 to 35 times the concentrations found in the other surface water samples collected. The downstream surface water sample NJG3-SW5 contained concentrations of inorganic compounds as much as five times the concentrations found in upstream samples NJG3-SW6, 7.

Ref. Nos. 2, 22

TABLE 2 - SUMMARY OF ANALYSES FOR SEDIMENT SAMPLES

Parameter/unit	<u>Sediment Sample</u>			
	Sed 1	Sed 4	Sed 5	Sed 6
Phenanthrene ug/kg			5300	4800 NS no/kg
Fluoranthene ug/kg			15,000	4700 10,000/100
Pyrene ug/kg			9600	3500 10,000, 100
Benzo (a) anthracene ug/kg			*6900	2000 4/500
Chrysene ug/kg			7300	2400 40/500
Benzo(b)fluoranthene ug/kg			5800	2300 NS
Benzo(k)fluoranthene ug/kg			3700	1100 4/500 NS
Indeno (1,2,3-cd) pyrene ug/kg			3200	1600 4/500
Benzo(a)pyrene ug/kg			*4400	2000 66/100
Benzo(g,h,i)perylene ug/kg			2700	2000 NS
Aroclor - 1254 ug/kg	*2600 E		*1400 E	*4200 E 2/50
Aroclor - 1260 ug/kg	*2400 E		*1600 E	
Mercury mg/kg	0.7	2.6	8.7	2.3 270
Lead mg/kg	305	1020*	1180*	479 60
Chromium mg/kg	13.3	93.6	114	116

E - estimated value

TABLE 3 - SUMMARY OF ANALYSES FOR SURFACE WATER SAMPLES

Parameter/unit	<u>Surface Water Sample</u>	
	SW-5	SW-6, SW-7
Aluminum ug/L	2170 E	444 E, 467 E
Barium ug/L	445	211, 212
Chromium ug/L	21.6 E	4.6*, 4.2*
Copper ug/L	95.2 E	
Iron ug/L	11,900	2550, 2630
Lead ug/L	159	43.9, 42.8
Manganese ug/L	484	224, 220
Mercury ug/L	1.2	
Zinc ug/L	339	45.4, 47.7

* - estimated value, compound present below CRDL, but above IDL.

E - estimated value

blank space - compound analyzed for but not detected

5.0 CONCLUSIONS AND RECOMMENDATIONS

This site poses a potential threat of contamination of surface waters. Hazardous substances reported as being disposed of on site are chromate and bichromate slurry, organic waste, and pigment waste. Analyses of surface water samples collected at the Keegan Landfill Site indicate concentrations of chromium significantly greater in a downstream surface water sample than in an upstream sample. Semivolatile contaminants were detected in higher concentrations in the downstream sediment sample of Frank Creek than in the upstream sediment samples. However, the downstream samples, NJG3-SW5 and NJG3-SED5, were collected next to a railroad trestle; therefore, these contaminants may possibly be attributed to another source.

Groundwater in the area is not used for potable water, but solely for industrial use. The site is located in surface water, but there are no surface water intakes within 3 miles downstream of the site. The Hackensack River, located approximately 2.0 miles east of the site, is used for navigation by commercial and recreational vessels.

There is a potential for direct contact with hazardous substances present on site, since the site is not fenced. Based on the recreational targets from the Hackensack River and the potential for direct contact, this site is recommended for a **MEDIUM PRIORITY** for further action. A fence should be installed around the site to limit access to the landfill. Additional sediment and surface water samples should be collected from Frank Creek to determine if the contaminants present are attributable to the site or another source.

Ref. Nos. 1, 2, 4, 8, 10, 11, 22, 25, 26

6.0 REFERENCES

1. Preliminary Assessment, Malcolm Pirnie, Inc. May 5, 1986.
2. Field Notebook No. 0381, Keegan Landfill, TDD No. 02-8810-75, Site Inspection, NUS Corporation Region 2 FIT, Edison, New Jersey. December 19, 1988.
3. General Sciences Corporation, Graphical Exposure Modeling System (GEMS), Landover, Maryland, 1986.
4. Three-Mile Vicinity Map for Keegan Landfill, based on U.S.G.S. Topographic Maps 7.5 Minute Series, "Orange, N.J. Quadrangle," 1955 photorevised 1981, "Weehawken, N.J. Quadrangle," 1967 photorevised 1981, "Elizabeth, N.J. Quadrangle," 1967 photorevised 1981, and "Jersey City, N.J. Quadrangle," 1967 photorevised 1981.
5. U.S. Department of the Interior, Federal Water Pollution Control Administration, Report on the Quality of the Interstate Waters of the Lower Passaic River and Upper and Lower Bays of New York Harbor, November 1969.
6. New Jersey Department of Conservation and Economic Development, Hackensack Meadows Comprehensive Plan Technical Report No. 2A, Definition of the Meadows, March 15, 1965.
7. County of Bergen, New Jersey, Office of the County Engineer Feasibility Study and Report of a Hackensack River Dam. October 1966.
8. Uncontrolled hazardous waste site ranking system, A user's manual, 40 CFR Part 300, Appendix A, 1986.
9. Suszkowski, Dennis J. Sedimentology of Newark Bay, New Jersey: An Urban Estuarine Bay, June 1978.
10. Telecon Note: Conversation between Ms. Carole Schmidt, Kearny Water Department, and David Heim, NUS Corp., July 6, 1989.
11. Telecon Note: Conversation between Mr. Vince Bucci, Essex County Parks Department, and David Heim, NUS Corp., July 7, 1989.
12. New Jersey Geological Survey, Department of Environmental Protection, Bedrock Map of the Hackensack Meadows, 1959, revised 1962.
13. New Jersey Department of Environmental Protection (NJDEP), Bureau of Water Allocation, Water Withdrawal Points and NJGS Case Index Site within 5.0 miles of latitude 40° 44' 53", longitude 74° 06' 48", October 19, 1988.
14. Letter from Edward J. Londres, New Jersey Department of Environmental Protection, to Henry J. Hill, Mayor of Kearny, July 2, 1987.
15. Letter from James A. Rogers, James C. Anderson Associates, Inc., to Henry Hill, Mayor of Kearny, July 7, 1987.
16. Letter from Joseph E. Neglia, Town Engineer, Town of Kearny, to Mayor and Council, Town of Kearny, August 28, 1987.
17. Letter from Robert Ferraiuolo, Hudson Regional Health Commission, to Henry Hill, Mayor of Kearny, July 14, 1987.

6.0 REFERENCES (Cont'd)

18. Letter from Edward Grosvenor, Health Officer, Town of Kearny, to Henry Hill, Mayor of Kearny, July 21, 1987.
19. Letter from John P. Sarnas, Assistant Health Officer, Town of Kearny, to Henry Hill, Mayor of Kearny, July 23, 1987.
20. Letter from John A. Castner, NJDEP to John P. Sarnas, Assistant Health Officer, Kearny Department of Health and Environmental Protection, August 25, 1987.
21. Kearny Department of Public Health and Environmental Protection Memos regarding landfill fire dated June 25, 26, 29, 30 and July 1, 2, 6, 7, 8, 9, 10, 1987.
22. U.S. EPA Contract Laboratory Program, PEI Associates, Inc., and York Laboratories, Case No. 11834, Laboratory Analysis from NUS Corporation Region 2 FIT Site Inspection conducted on April 25, 1989.
23. New Jersey and National Registers of Historic Places, June 1, 1980.
24. Carswell, L.D. Appraisal of Water Resources in the Hackensack River Basin, New Jersey. U.S. Geological Survey Water Resources Investigations 76-74. June 1976.
25. Telecon Note: Conversation between Mr. Michael Beard, Kearny Health Department, and Gerald Gilliland, NUS Corp., April 20, 1989.
26. Telecon Note: Conversation between Lt. Ronald Johnstone, Kearny Police Department, and Gerald Gilliland, NUS Corp., April 25, 1989.
27. U.S. Department of the Interior. U.S. Fish and Wildlife Service, Atlantic Coast Ecological Inventory, New York (N.Y.-Conn.-N.J.), 1980.

Hackensack Meadowlands Development Commission

MEMORANDUM

To MEMO TO FILE
From Michael Kondratick Date March 6, 1972
Subject Sanitary Landfill Inspection Municipal Sanitary Landfill File , Part of HMDC Site #4

Weather: Rainy

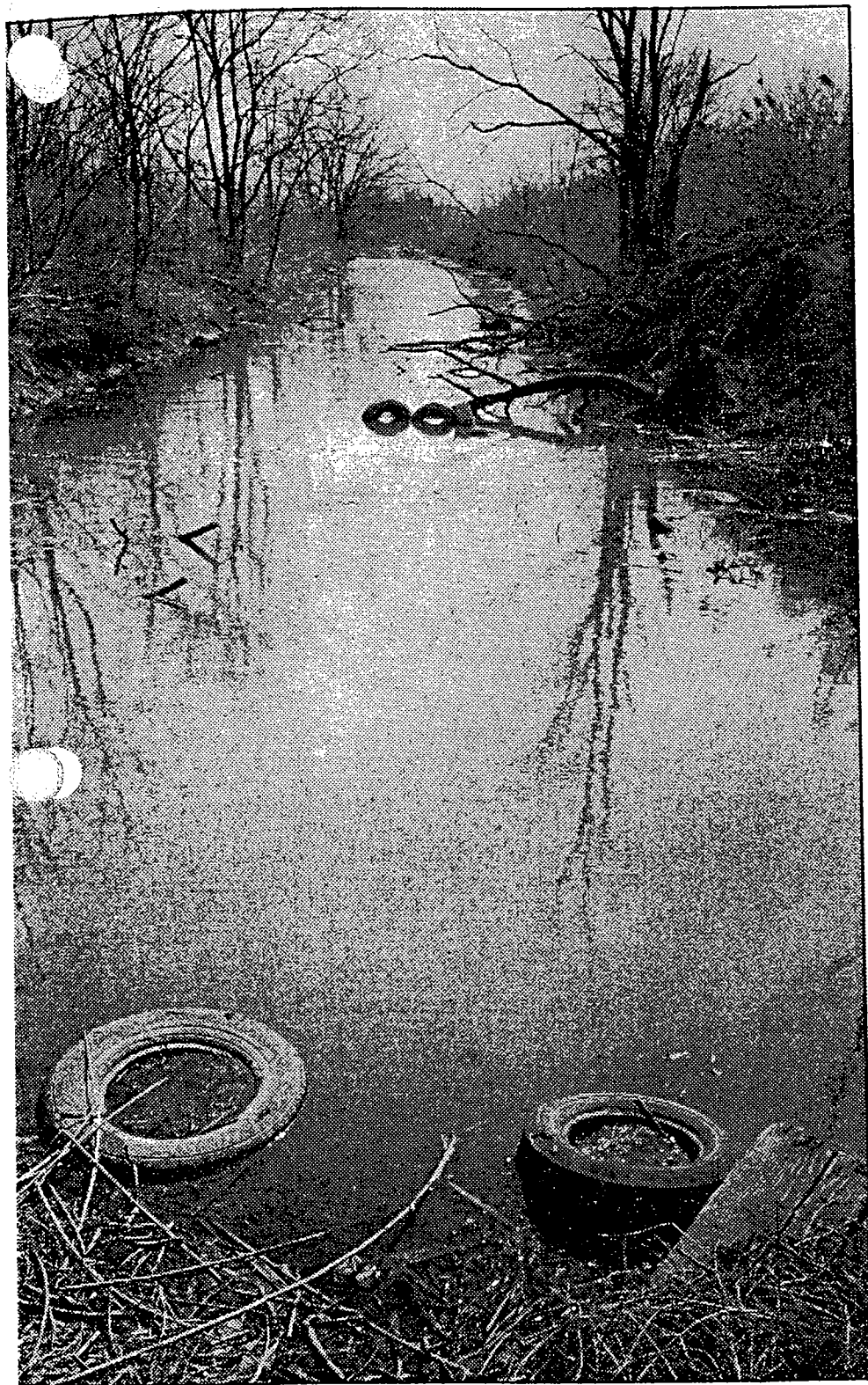
- (1) On the access road to the left , the site looks acceptable and cover adequate. On the right, previously used cells have not been covered at all.
- (2) The area is totally engulfed with gulls and it is obvious that there is no proper daily cover. At the top of the crest of the landfill, there is a big cavity and there is evidence of oil being dumped, barrels are on the edge of the opening marked Western Electric. We must remember that Keegan is obligated under lease to take all industrial waste from the Town of Kearny. There is an area of 55 gal drums with an elevation of 35 or 45, that is just swimming with oil and 55 gallon drums. Both of the foregoing were photographed.

GENERAL

Michael Kondratick

/jo

Keegan landfill is a trash moonscape



Journal photos by Bill Bayer

The Hackensack Meadowlands Development Commission wants to reopen the 110 acre landfill (right), which along with the nearby "1D" dumps, is leaking millions of gallons of contaminants annually into marshes and areas such as the site pictured above.

Residents hoping plan to reopen dump fails

By Dan Rosenfeld
Journal staff writer

KEARNY — Half-burned mounds of yellowed paper and lunch meat remnants line the cavernous walls of a Keegan landfill garbage crater. "No Deposit, No Return" bottles and cans create a trash moonscape complete with a 10-foot deep valley larger than a hockey rink.

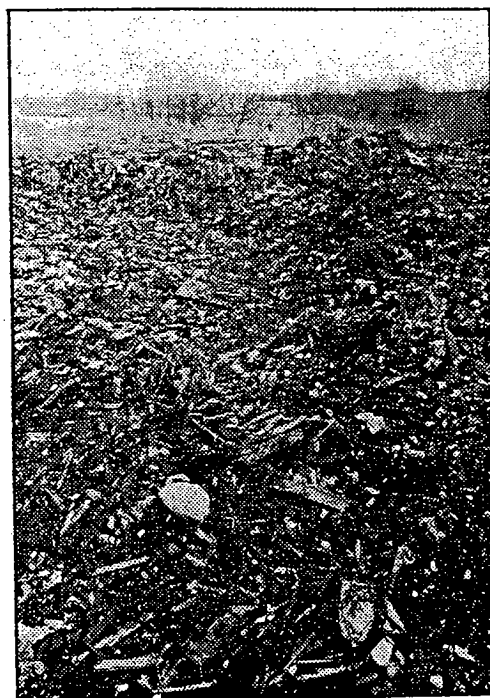
Backhoes cut these holes through layers of garbage to extinguish underground blazes fed from methane continually created by decaying food, yard clippings and other biological waste.

"Right now we're standing on 25 feet of garbage," said Thomas Marturano, Hackensack Meadowlands Development Commission director of Solid Waste.

The HMDC wants to reopen this 110-acre landfill and use the money to properly contain Keegan and nearby "1D" dumps which are leaking millions of gallons of contaminants annually into marshes and harbor. But hundreds of Kearny residents, the town government and a development company are trying to block the reborn dump.

The HMDC board will vote April 22 on reopening the dump for non-recyclable construction debris which can't be sent to

See RESIDENTS — Page 5



entalists hope Keegan will stay shut

the HMDC has just begun measuring the effects of heavy metals on the local ecosystem. The rabbit caught in a trap overnight recently was devoured by a fox before researchers could retrieve it.) The continuous flow of metals into the marsh and up and into the can take only so long," Smith said.

deral Environmental Protection Agency tests found lead, cadmium, barium, chromium, mercury and other heavy metals in the surface water. The sediments contain a potpourri of petroleum wastes and PCBs (polychlorinated biphenyls), chemicals, used in electrical transformers or some pesticides that are known to cause cancer. Thousands of 55-gallon drums containing chromate and other toxic wastes were dumped in the area during the 1960s. Frank Creek, a yellowish, sulfidic ditch field with putrid odors, bisects the dump. The area has been described Frank Creek as an open sewer, but at least one snapping turtle calls it

Surface water samples col-

lected from Frank Creek contain inorganic concentrations from 2 to 35 times the concentrations found in the other surface water samples," according to the EPA Site Inspection Sampling Results. "The downstream surface water samples contained concentrations as much as five times the concentrations found in upstream samples."

Yet Keegan is not a static mound of trash. Anaerobic organisms digest biological waste raising the temperature inside a landfill to 190 degrees. Slowly that material is broken down, leaving a larger percentage of toxic metals, plastics and other items which will most likely last until the next ice age.

The growing acidity of local rainfall tears more metals out of the landfill. Trees try to take root in the landfill, but must latch on to garbage in order to remain upright.

"Trees can't send deep roots because the methane dissolves the oxygen in the subsoil," Marturano said.

Hudson Meadows Development Corporation, which holds a

lease on the property, wants to build a mixed-use development at Keegan which will include stores, office towers and a hotel. Next door to the luxury hotel site are coffin, port-a-toilet and garbage companies.

HMDC officials agree that building on the site is possible, but an approved development would require massive amounts of clean fill and remediation efforts.

The main environmental goal of any development would be containing the leachate. The first step would be digging a moat down to the watertable. This trench would encircle the landfill's perimeter.

The moat would then be filled in with a special clay called bentonite which would be trucked in from Wyoming. Bentonite, which is formed when volcanic ash is compressed over

centuries, can absorb huge amounts of water. The leachate could then be collected, pumped out and treated.

"We end up with a huge bathtub," Marturano said.

Sealing Keegan would cost \$30 million, which could be completely funded through re-opening the landfill. Hudson Meadows officials have told the HMDC they too could raise the money with their project. The HMDC plan also calls for capturing the runoff from the "1D," which contains a 250,000-gallon waste-oil lake.

The heart of the battle remains one logical question put to the HMDC board by 60-year-old Kearny resident Bruce Wood. Should a town, just now casting off its 'Garbage City' US image, be forced to take yet another garbage dump?

REPLACEMENT WINDOW

MSLA 1D



Hackensack Meadowlands Development Commission

Memorandum

TO Theodore J. Fischer, Division of Design, Area II, N.J.D.O.T.

FROM John T. Bolan, HMDC *JB* Date January 4, 1980

Subject Liner Damage in the Kearny Disposal Area

Based upon a review of the monitoring data for wells 1A, 1B, 1C, and 1D, in the Kearny Disposal Area (see attached map), one of the wells, 1D, appears to show increasing concentrations of BOD₅, COD and Chlorides. Additionally, a recent physical inspection of the well reveals a black liquid in the bottom of the well.

Therefore, it appears that the liner enclosing the disposal area has been damaged. Since the liner material is compacted sand, a non-cohesive soil, corrective actions will be needed before further damage to the liner occurs.

At this point, it is not possible to determine if the materials in the disposal area are leaching into the surrounding soils. It is recommended that additional testing, commencing as soon as possible, be undertaken to identify the magnitude of the liner damage. Sampling of wells 1A, 1B, 1C, and 1D, on a bi-weekly basis, during a two month period for Petroleum Hydrocarbons only, (EPA Silica Gel & NDIR Procedure) should be sufficient.

If you have any questions, please contact me.

Enc.

cc: T. Germino, DAG (w/enc)
H. Steinberg, I-280 Field (w/enc)
F. Cimonetti, NJDOT-Newark (w/enc)

